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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/622,631 | 07/21/2003 | Manuel R. Silva JR. | 052250-5003 | 4556 |
| 26633 | 7590 | 12/28/2005 | EXAMINER | |
| HELLER EHRMAN WHITE & MCAULIFFE LLP 1717 RHODE ISLAND AVE, NW WASHINGTON, DC 20036-3001 | | | GORMAN, DARREN W | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3752 | |

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/622,631 | | SILVA ET AL. | |
| | Examiner | | Art Unit | |
| | Darren W. Gorman | | 3752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-134 is/are pending in the application.
- 4a) Of the above claim(s) 2, 3, 5, 7-26, 36-47, 52-54 and 58-134 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 55 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6, 27-35, 48-51, 56 and 57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>04/23/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Invention Group I and further Species Group C, in the reply filed on December 1, 2005 is acknowledged. The traversal is on the ground(s) that the Examiner indicated no claim(s) as being generic. Upon closer review, the Examiner agrees with Applicant that at least claims 1 and 51 are generic to all identified species, however the traversal of the restriction/election of species requirement is not found persuasive because such an argument does not specifically traverse the appropriateness of the restriction/election of species requirement.

The requirement is still deemed proper and is therefore made FINAL.

2. In the reply filed December 1, 2005, Applicant indicated that claims 1, 4-6, 11, 27-35, 48-51, 55-57 and 72-74 are readable on the elected Species Group C (Embodiment shown in Figures 3A-3F). However, the Examiner has determined that only claims 1, 4, 6, 27-35, 48-51 and 55-57 read on the elected species.

3. Claims 2, 3, 5, 7-26, 36-47, 52-54 and 58-134 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention or species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on December 1, 2005.

Information Disclosure Statement

4. The two IDS forms filed on April 23, 2004 are hereby acknowledged and have been placed of record. Please find attached a signed and initialed copy of each PTO 1449.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 28 recites, “the truncated conical surface extending at an angle of about thirty degrees with respect to the longitudinal axis”. The specification does not appear to disclose such a specific angle with reference to this surface. If Applicant believes this objection to be in error, the Examiner respectfully requests that Applicant indicate where this claim limitation has appropriate antecedent basis in the filed specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 4, 6, 28, 32-35, 56 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 4, it is unclear exactly what “member” of the elected embodiment shown in Figures 3A-3F claim 4 is referring to. As understood by the Examiner, in the elected embodiment, closure body (34) contacts projection (410) to translate the metallic disc annulus to a side of the longitudinal axis. Is the recited “member” referring to the “projection 410”? If this is the case, then the claim is unclear because the “member” must contact one of the “locator” and the “metallic disc annulus”. As clearly shown in Figure 3C, only closure body (34) contacts

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projection (410) while disc annulus (36) does not contact the projection. Is the “closure body 34” considered part of the “locator”? Is this claim reciting features of a different embodiment that is mutually exclusive from the elected embodiment shown in Figures 3A-3F?

Regarding claim 6, as discussed above with regard to claim 4, only closure body (34) contacts projection (410). Is the “closure body 34” considered part of the “locator”? Is this claim reciting features of a different embodiment that is mutually exclusive from the elected embodiment shown in Figures 3A-3F?

Regarding claim 28, the recitation “the planar annulus surface” lacks antecedent basis. Further, with reference to the “truncated conical surface” of the inlet, it is unclear exactly what surface of the inlet shown in Figures 3A-3F this recitation is referring to. Is this recitation referring to the “entrance surface (38a)”?

Regarding claim 32, is the “surface oblique to the longitudinal axis surface” the same as the “oblique surface” recited in claim 31? If so, this is a double inclusion problem. If not, what surface, in addition to the claim 31 oblique surface, is this recitation referring to?

Regarding claim 33, with reference to the elected embodiment shown in Figures 3A-3F, there does not appear to be a “generally planar surface” of the disc annulus contacting planar annulus surface (38b) of the inlet fitting (23), when the locator is proximate the first position. As shown in Figure 3A, in the first position, the disc annulus has a truncated conical surface (37) on the upper end thereof, not a “planar” surface, wherein only the outer perimeter of the truncated surface contacts the planar annulus surface (38b). Is this claim reciting features of a different embodiment that is mutually exclusive from the elected embodiment shown in Figures 3A-3F?

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Regarding claim 34, the claim is completely confusing. Applicant's assistance in explaining this claim, especially in combination with the limitations of claims 32 and 33, is respectfully requested.

Regarding claim 35, the claim seems to be inconsistent with the disclosure of the elected embodiment shown in Figures 3A-3F. The disc annulus shown in the elected embodiment is supported on closure body "34". Is the "closure body 34" considered part of the "locator"? What part of the elected embodiment is the "seat" referring to?

Regarding claim 56, the recitation "the first tubular portion" lacks antecedent basis. What "portion" is this recitation referring to?

- The above claims will be examined as best understood by the Examiner.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 4, 27, 29 and 48-51 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hodgman, Jr., USPN 2,155,990.

Hodgman shows a dry sprinkler comprising: a structure (5, 6, 12) defining a passageway extending along a longitudinal axis between an inlet (12) and an outlet (27); a fluid deflecting structure (11) proximate the outlet; a locator (26) movable along the longitudinal axis between a first position and a second position; and a metallic disc annulus (21) (see page 2, lines 41-43)

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supported on a closure body (15), the disc annulus having a face disposed about a central axis between an inner perimeter and an outer perimeter, the outer perimeter contacting a portion of the structure so that the face occludes a flow of fluid through the passageway when the locator is in the first position (see Figure 1), and wherein the disc annulus is skewed from the longitudinal axis within the passageway when the locator is proximate the second position (see Figure 3).

Hodgman further shows the sprinkler including a member (16) that contacts the closure body and disc annulus assembly such that when the locator moves from the first position to the second position, the face of the disc annulus is translated to one side of the longitudinal axis (see Figure 3). Further, Hodgman shows the inlet (12) comprising an entrance surface having a first end and a second end disposed along and surrounding the longitudinal axis, and a seat surface (14) adjacent the second end of the entrance surface.

Regarding the recitation that the flow of fluid from the outlet of the structure is at least 95 percent of the rated K-factor, Hodgman clearly discloses (see page 2, lines 20-39) and shows (see Figure 3) that water flows unobstructed through the inlet port and out through the outlet to the deflecting structure when the locator is proximate the second position. Though Hodgman does not expressly discuss a K-factor rating for the disclosed device, the device would inherently have a K-factor rating defining an expected flow rate. Further, the term “unobstructed” can reasonably be interpreted to mean that the flow of fluid from the outlet is at least 95 percent of the inherent K-factor rating, or in the alternative, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or modify the disclosed parameters of the device shown by Hodgman in order to ensure that the flow of fluid from the outlet is provided at an acceptable and optimal level.

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Regarding the recitations in claims 27 and 48-50, with respect to the size of the threads (7) on the outer cylindrical surface of the inlet end of the structure, the pressure of the flow fed into the inlet end, and the specific K-factor of the structure, each of the recited parameters are reasonably within the spirit of the disclosure of Hodgman, or in the alternative, each of these recited parameters are old and well known in dry sprinklers of the prior art, and as such do not constitute a patentable distinction over the device shown by Hodgman. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the sprinkler of Hodgman having each of the recited parameters of known dry sprinklers, since these parameters are well known to those in the art.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1, 27-35 and 48-51 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Dolan, US Patent Application Publication 2002/0050531.

Dolan shows a dry sprinkler (see Figures 1-3) comprising: a structure (11, 21, 13) defining a passageway extending along a longitudinal axis between an inlet (21) and an outlet (13); a fluid deflecting structure (12) proximate the outlet; a locator (25) movable along the longitudinal axis between a first position and a second position; and a metallic disc annulus (23b)

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supported on a closure body (23), the disc annulus having a face disposed about a central axis between an inner perimeter and an outer perimeter, the outer perimeter contacting a portion of the structure so that the face occludes a flow of fluid through the passageway when the locator is in the first position (see Figure 2), and wherein the disc annulus is skewed from the longitudinal axis within the passageway when the locator is proximate the second position (see Figure 3).

Dolan further shows the inlet comprising an entrance surface formed as a truncated conical surface having a convex curve, the entrance surface facing and surrounding the longitudinal axis and having a first end and a second end. Dolan further shows a planar annulus seat surface adjacent the second end of the entrance surface and also an oblique surface adjacent the planar annulus surface. Further, the disc annulus of Dolan includes a truncated conical upper surface, the outer perimeter thereof contacting the planar annulus seat surface when the locator is proximate the first position.

Regarding the recitation that the flow of fluid from the outlet of the structure is at least 95 percent of the rated K-factor, there is nothing in the disclosure of Dolan that would indicate that the water flow rate through the device would be at an unacceptable level. Though Dolan does not expressly discuss a K-factor rating for the disclosed device, the device would inherently have a K-factor rating defining an expected flow rate. Further, since one would reasonably expect the device of Dolan to provide an acceptable flow rate, one can reasonably conclude that the flow of fluid from the outlet of Dolan is at least 95 percent of the inherent K-factor rating, or in the alternative, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust or modify the disclosed parameters of the device shown by Dolan

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in order to ensure that the flow of fluid from the outlet is provided at an acceptable and optimal level.

Regarding the recitations in claims 27 and 48-50, with respect to the size of the threads (21a) on the outer cylindrical surface of the inlet end of the structure, the pressure of the flow fed into the inlet end, and the specific K-factor of the structure, each of the recited parameters are reasonably within the spirit of the disclosure of Dolan, or in the alternative, each of these recited parameters are old and well known in dry sprinklers of the prior art, and as such do not constitute a patentable distinction over the device shown by Dolan. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the sprinkler of Dolan having each of the recited parameters of known dry sprinklers, since these parameters are well known to those in the art.

Allowable Subject Matter

12. Claim 55 is allowed.

13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, alone or in combination, did not show or teach a dry sprinkler including a projection extending from the tubular outer structure, the projection having a free end located in the passageway such that the free end contacts the closure assembly to translate the surface of the closure assembly to a side of the longitudinal axis when the inner tubular assembly moves from the first position towards the second position, as recited in claim 55.

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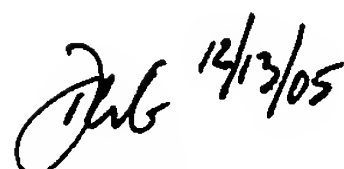
Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 6,851,482 to Dolan was granted from the same application that yielded the relied upon patent application publication to Dolan. The Dolan patent is being cited herein because the published drawings of the patent show the details of the device more clearly than the published drawings of the application publication.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Gorman whose telephone number is 571-272-4901. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on 571-272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DWG
December 13, 2005

Darren W Gorman
Examiner
Art Unit 3752


David A. Scherbel
Supervisory Patent Examiner
Group 3700